

09/583120

**Allowed Claims 31, 36-41, 44-51, 53, and 55-58
(28682/71100)**

(FnlRej) - From Final Rejection Response
(AmdA) - From Amendment A (Response)
(2ndPreAmd) - From Second Preliminary Amendment
(PreAmd) - From Preliminary Amendment

31. (Twice Amended) An intercalate comprising a layered clay material having less than about 2.0% by weight of quartz, based on the weight of the clay material, intercalated with an organic cation intercalant and a polyamide oligomer or polymer intercalant selected from the group consisting of poly (*m*-xylylene adipamide); a copolymer thereof; nylon 6; nylon 6,6; and a mixture thereof. (FnlRej)

36. (AMENDED) The intercalate of claim 31, wherein the layered clay material comprises montmorillonite, hectorite, mica, vermiculite, bentonite, nontronite, beidellite, volkonskoite, saponite, magadite, kenyaite, or a mixture thereof. (2ndPreAmd)

37. The intercalate of claim 31, wherein the clay material comprises sodium montmorillonite or sodium bentonite. (PreAmd)

38. The intercalate of claim 31, wherein at least 50 percent of the clay material is dispersed in a carrier in the form of individual platelet particles and tactoids and the individual platelet particles have a thickness of less than about 2 nm and a diameter of from about 10 to about 3,000 nm. (PreAmd)

39. The intercalate of claim 31, wherein the layered clay material has less than about 1.0% by weight of quartz particles. (PreAmd)

40. The intercalate of claim 31, wherein the organic cation intercalant is derived from an ammonium salt compound. (PreAmd)

41. (Twice Amended) The intercalate of claim 31, wherein the polyamide oligomer or polymer intercalant comprises poly(*m*-xylylene adipamide) or a copolymer thereof, and the clay material comprises sodium montmorillonite or sodium bentonite. (AmdA)

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44. (AMENDED) The intercalate of claim 56, wherein the polyamide comprises poly(m-xylylene adipamide) or a copolymer thereof, and the clay material comprises sodium montmorillonite or sodium bentonite. (2ndPreAmd)

45. (Twice Amended) A process for preparing an intercalate comprising the steps of:

- (i) intercalating a layered clay material with an organic cation, wherein the layered clay material has less than about 2.0% by weight of quartz, based on the weight of the layered clay material, and
- (ii) further intercalating the layered clay material with a melt of a polyamide oligomer or polymer intercalant selected from the group consisting of poly (m-xylylene adipamide); a copolymer thereof; nylon 6; nylon 6,6; and a mixture thereof. (FnlRej)

46. The process of claim 45, wherein steps (i) and (ii) are conducted by a batch mixing or a melt compounding extrusion process. (PreAmd)

47. (Twice Amended) The process for preparing an exfoliated layered clay material having less than about 2.0% by weight quartz comprising shearing the further intercalated clay material of claim 45. (FnlRej)

48. The intercalate of claim 39, wherein the layered clay material has less than about 0.7% by weight quartz. (2ndPreAmd)

49. The intercalate of claim 48, wherein the layered clay material has less than about 0.5% by weight quartz. (2ndPreAmd)

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50. The process of claim 45, wherein the layered clay material has less than about 0.7% by weight quartz. (2ndPreAmd)

51. The process of claim 50, wherein the layered clay material has less than about 0.5% by weight quartz. (2ndPreAmd)

53. (Twice Amended) The process of claim 50 wherein the polyamide oligomer or polymer intercalant comprises poly(*m*-xylylene adipamide), a copolymer thereof, or a mixture thereof. (FnlRej)

55. (Twice Amended) The process of claim 45, wherein the polyamide oligomer or polymer intercalant comprises poly(*m*-xylylene adipamide), a copolymer thereof, or a mixture thereof. (FnlRej)

56. (Amended) The intercalant of claim 31 that functions to decrease the gas permeability and haze of the polyamide intercalant. (AmdA)

57. (Amended) The process of claim 50 that functions to decrease the gas permeability and haze of the polyamide intercalant. (AmdA)

58. (Amended) The process of claim 51 that functions to decrease the gas permeability and haze of the polyamide intercalant. (AmdA)